

REMARKS/ARGUMENTS

Status of Claims

Claims 5 and 8 have been previously cancelled without prejudice or disclaimer. Claim 1 has been amended. Support for the amendments can be found at, e.g., paragraphs 0005, 0009, 0032-0035, 0043, 0057-0060, and 0068 of the specification as published. Claim 12 is newly added to present previously submitted dependent claim 7 in independent form. No new matter is added. Moreover, the amendments are presented to place the present application in condition for allowance and in response to the Examiner's statements, which will be discussed below in more detail. The amendments do not raise any new issue or require new search. Entry of the above amendments after the final Office Action is respectfully requested. Upon entry of the above amendments, claims 1-4, 6-7, and 9-12 are pending in the application with claims 1 and 12 being the only independent claims.

Overview of the Office Action

Claims 1-4, 6, 7, and 9-11 have been rejected under 35 U.S.C. § 112, second paragraph, due to one alleged informality.

Claims 1-4, 6, and 9-11 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Matsumoto (US 6,035,911) in view of JP '712 (JP 09-099712) and in view of at least one of JP '935 (JP 63-039935), JP '311 (JP 2002-275311), and Hausmann (US 5,252,649).

Claim 7 has been rejected under 35 U.S.C. § 103(a) as unpatentable over Matsumoto in view of JP '712 and in view of at least one of JP '935, JP '311, and Hausmann and further in view of JP '701 (JP 2000-153701).

Claims 1-4, 6, 7, and 9-11 have been rejected under 35 U.S.C. § 103(a) as unpatentable over JP '701 in view of at least one of JP '935, JP '311, and Hausmann.

Amendments and Remarks Addressing 35 U.S.C. § 112 Rejection

Claims 1-4, 6, 7, and 9-11 have been rejected under 35 U.S.C. § 112, second paragraph, because the Examiner states that it is unclear whether the phrase "before the tire is used" at claim 1, lines 9-10 has the same scope as the phrase "before the new tire is used" at claim 1, line 12. In response, Applicants have amended the phrase "before the tire is used" at claim 1, lines 9-10 to "before a new tire is used," as suggested by the Examiner. Therefore, the 35 U.S.C. § 112, second paragraph, rejection has been overcome. Withdrawal of the rejection under 35 U.S.C. § 112, second paragraph is respectfully requested.

Summary of the Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

Tire treads need to have a good wear life performance on dry roadways while substantially improving the grip performance on wet roadways. The techniques meeting these two criteria, however, may counteract one another because tread rubber compositions with good wear performance on dry roadways have poor grip performance on wet roadways. Consequently, the vehicle is more difficult to drive on wet roadways since it is more difficult to follow a good trajectory. Conversely a rubber composition having a good grip performance on wet roadways has a poor wear life on dry roadways.

The present application provides a tire tread that is formed by a base rubber mix (MB) having good wear properties on dry roadways and by a covering rubber mix (MR) on the sidewalls (13 - 16) of the tread pattern elements (1). The covering rubber mix (MR) comprises the following composition to improve grip performance of the tread:

- a given proportion of butyl rubber (e.g., more than 30 phr); and

- a plasticizer of unsaturated C₁₂-C₂₂ fatty acid ester type.

The base rubber mix (MB) is free of an unsaturated C₁₂-C₂₂ fatty acid ester (currently-amended claim 1) or devoid of butyl rubber (new claim 12).

The above-described covering rubber mix enhances grip performance on wet roadways. The provision of such a mix and its location only on the sidewalls (13-16) of the tread pattern elements (1) surprisingly improve the wet grip performance for the entire tread compared to a tread band having only a rubber mix with a good wear performance. For example, the covering rubber mix (MR) in the subject application can prevent the tread from skidding on wet roadways.

See, e.g., Fig. 2 and paragraphs [0004]-[0005] and [0012]-[0013] of the published version of the specification in US 20007/0062623.

Patentability of the Claimed Invention

- A. Obviousness rejection of claims 1-4, 6, and 9-11 under 35 U.S.C. § 103(a) over Matsumoto in view of JP '712, JP '935, JP '311, and Hausmann

Claims 1-4, 6, and 9-11 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Matsumoto in view of JP '712 and in view of at least one of JP '935, JP '311, and Hausmann. For reasons expressed below, this rejection has become moot in view of the above-presented amendments to the claims.

Currently amended independent claim 1 recites "said covering mix comprising ... a plasticiser of an unsaturated C₁₂-C₂₂ fatty acid ester type" and "wherein the at least one base mix is free of an unsaturated C₁₂-C₂₂ fatty acid ester."

The Examiner acknowledges that the combination of Matsumoto, JP '712, JP '935, JP '311, and Hausmann, as proposed by the Examiner, would at best produce a tire tread that comprises a plasticiser of an unsaturated C₁₂-C₂₂ fatty acid ester type in both the covering mix and the base mix. See, e.g., pages 9-10, bridging paragraph of the Office Action. In contrast,

claim 1 of the present application has now explicitly excluded "unsaturated C₁₂-C₂₂ fatty acid ester" from the base mix. The Examiner appears to agree that that the currently-amended claim 1 is distinguishable from the product produced from the combination of Matsumoto, JP '712, JP '935, JP '311, and Hausmann, as proposed by the Examiner. *See* page 10 of the Office Action. The Examiner also indicates that the currently-amended claim 1 is supported by the specification. *See* page 10 of the Office Action. Indeed, for example, the Table on page 5 of the application as published explicitly discloses that the base mix contains no plasticizer of an unsaturated C₁₂-C₂₂ fatty acid ester type (*see* also, e.g., paragraph 0009 discussing a plasticizing agent of an unsaturated C₁₂-C₂₂ fatty acid ester type).

Therefore, claim 1 is patentable under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, and Hausmann.

For at least the same reasons, claims 2-4, 6, and 9-11, each of which depends, directly or indirectly, from claim 1, are also patentable under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, and Hausmann. Moreover, these dependent claims each include features that serve to further distinguish the claimed invention over the applied prior art.

Based on the foregoing, Applicants respectfully request that the rejection of claims 1-4, 6, and 9-11 under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, and Hausmann be withdrawn.

B. Obviousness rejection of claims 7 under 35 U.S.C. § 103(a) over Matsumoto in view of JP '712, JP '935, JP '311, and Hausmann and further in view of JP '701

Claim 7 has been rejected under 35 U.S.C. § 103(a) as unpatentable over Matsumoto in view of JP '712 and in view of at least one of JP '935, JP '311, and Hausmann and further in view of JP '701. Applicants respectfully traverse.

Claim 7, depending from claim 1, recites "wherein the base mix is devoid of butyl rubber."

First, as stated above, claim 1 is patentable under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, and Hausmann. JP'701 is only relied upon by the Examiner to show that the additional feature recited in claim 7 would have been obvious. JP '701 cannot remedy any deficiencies discussed above in connection with Matsumoto, JP '712, JP '935, JP '311, and Hausmann. Therefore, for at least this reason, claim 7 is patentable under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, Hausmann, and JP '701.

Second, the additional feature recited in claim 7 provides another reason that claim 7 is patentable under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, Hausmann, and JP'701. Specifically, the Examiner relied on JP'935, JP'311, and Hausmann to show that it would have been obvious for a person of ordinary skill in the art to use both butyl rubber and fatty acid ester in an entire tire tread (comprising base mix and cover mix). *See, e.g.,* pages 3-4, bridging paragraph, pages 7-8, bridging paragraph, and pages 9-10, bridging paragraph of the Office Action. Therefore, the combination of JP'935, JP'311, and Hausmann with other references, i.e., Matsumoto, JP'712, and JP'701 would lead to a tire tread comprising both butyl rubber and fatty acid ester in the base mix and cover mix. The composition so obtained is not a rubber tread for a tire that is devoid of butyl rubber in the base mix, as recited in claim 7. In other words, the combination of Matsumoto, JP '712, JP '935, JP '311, Hausmann, and JP '701 as proposed by the Examiner, would not arrive at the invention described in claim 1.

Similarly, independent claim 12 recites, among other things, "wherein the at least one base mix is devoid of butyl rubber." For at least the second reason discussed above in connection with claim 7, claim 12 is patentable under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, Hausmann, and JP '701.

Based on the foregoing, Applicants respectfully request that the Examiner allow new claim 12 and withdraw the rejection of claim 7 under 35 U.S.C. § 103(a) over Matsumoto, JP '712, JP '935, JP '311, Hausmann, and JP '701.

- C. Obviousness rejection of claims 1-4, 6, 7, and 9-11 under 35 U.S.C. § 103(a) over JP '701 in view of at least one of JP '935, JP '311, and Hausmann.

Claims 1-4, 6, 7, and 9-11 have been rejected under 35 U.S.C. § 103(a) as unpatentable over JP '701 in view of at least one of JP '935, JP '311, and Hausmann. For reasons expressed below, this rejection has become moot in view of the above-presented amendments to the claims.

The Examiner acknowledges that the combination of JP'701, JP '935, JP '311, and Hausmann, as proposed by the Examiner, would at best produce a tire tread that comprises a plasticiser of an unsaturated C_{12} - C_{22} fatty acid ester type in both the covering mix and the base mix. See pages 10-11 of the Office Action. As stated above, claim 1 of the present application has now explicitly excluded "unsaturated C_{12} - C_{22} fatty acid ester" from the base mix and, therefore, distinguishes the invention over the product produced from the combination of JP'701, JP '935, JP '311, and Hausmann, as proposed by the Examiner.

Therefore, claim 1 is patentable under 35 U.S.C. § 103(a) over JP'701, JP '935, JP '311, and Hausmann.

For at least the same reasons, claims 2-4, 6, 7, and 9-11, each of which depends, directly or indirectly, from claim 1, are also patentable under 35 U.S.C. § 103(a) over JP'701, JP '935, JP '311, and Hausmann. Moreover, these dependent claims each include features that serve to further distinguish the claimed invention over the applied prior art.

Moreover, as noted above, the Examiner relied on JP'935, JP'311, and Hausmann to show that it would have been obvious for a person of ordinary skill in the art to use both butyl rubber and fatty acid ester in an entire tire tread (comprising base mix and cover mix). See, e.g.,

pages 3-4, bridging paragraph, pages 7-8, bridging paragraph, and pages 9-10, bridging paragraph of the Office Action. Therefore, the combination of JP'935, JP'311, and Hausmann with the other reference, i.e., JP'701, would lead to a tire tread comprising both butyl rubber and fatty acid ester in the base mix and cover mix. The composition so obtained is not a rubber tread for a tire that is devoid of butyl rubber in the base mix, as recited in claims 7 and 12. In other words, the combination of JP '701, JP'935, JP'311, and Hausmann, as proposed by the Examiner, would not arrive at the invention described in claims 7 and 12. This constitutes another ground for establishing that both claim 7 and new claim 12 are patentable under 35 U.S.C. § 103(a) over JP '701, JP'935, JP'311, and Hausmann.

Based on the foregoing, Applicants respectfully request that the Examiner allow new claim 12 and withdraw the rejection of claims 1-4, 6, 7, and 9-11 under 35 U.S.C. § 103(a) over JP '701, JP'935, JP'311, and Hausmann.

Conclusion

Based on all of the above, the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,
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